LA, TI, DOES Music Affect Students' On-task Behavior?

A Teacher Inquiry

By:

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Teaching Context

Naomi’s 6th Grade Classrooms:

Mount Nittany Middle School is composed of grades six through eight. Sectioned off to its own hallway, the sixth grade is broken up into two teams, the yellow team and the blue team. The yellow team has four classes and the blue team has six classes, all with approximately twenty-five students. Students remain with their homeroom teachers, switching for specials, math, and either science or social studies. Students are exposed to laptops on a daily basis. Additionally, Mount Nittany Middle School strives for a strong school community. Students learn in large part through discussion and a variety of supporting activities.

Our sixth grade writing class consists of thirteen females, nine males, and one student who is home-schooled because of medical complications. Most students are reading and comprehending at a sixth grade level. One student receives learning support for reading, one student receives Title 1 reading, and one student was recently exited from English as a Second Language support. One student is visually impaired and receives supplements written in Braille. Five students receive enrichment instruction. One student takes morning classes at the high school. Four students are in a seventh grade advanced math class. Additionally, one student has been identified as having Attention Deficit Hyperactivity Disorder. We have three female leaders and one male leader who often pick up content quickly, participate in class discussions, ask questions, and help their peers.
Most of the students are easy going and get along with one another. Our students easily find a partner when asked to work in pairs. Our students have a variety of interests and learning styles.

For our sub-question, "How will playing music affect students' transition time?" we focused on Naomi's sixth grade math class. Our sixth grade advanced math class consists of sixteen females and fourteen males. All students are reading and comprehending at or above a sixth grade level. Three students have been identified as having Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder, whereas one is unofficially diagnosed. We have one student diagnosed with an adjustment disorder, one student diagnosed with Asperger's syndrome, and one student diagnosed with pervasive developmental disorder and anxiety. One student receives English Language Learner support services.

Our math class has a wide range of abilities and interests. We have five students who have a strong presence in the classroom. These students pick up content quickly, participate in class discussions, help their peers, and ask questions when they do not understand a concept. Four students are very evasive when it comes to difficult work. For example, if these students feel challenged, they will not strive to complete the problem. One student often distracts his peers and needs frequent redirection. There are also a group of three girls who are part of an exclusive social clique. Our math class can be categorized as high energy and garrulous.

Our thirty-person class lends itself nicely to co-teaching with multiple stations. Stations support our wide variety of learners. Stations are used for both enrichment and
additional help with lesson content. Because stations are used within the classroom, transitions are also a daily occurrence.

Katie's 1st and 2nd Grade Classrooms:

Radio Park Elementary is a school that houses Kindergarten through fifth grade under one roof. Classrooms usually consist of anywhere from eighteen to twenty-five students per teacher. In the primary hallway each classroom has one paraprofessional. Depending on the grade, each student has access to either a laptop or iPad on a daily basis. Radio Park strives to create a student body with strong values. Every day the students say the 4-B’s pledge, "I pledge to be prepared, be responsible, be a good listener and be kind to myself and others."

The first/second grade classroom that I am working with throughout this inquiry consists of twenty-one students ages six to eight. There are eleven first graders and ten second graders in the classroom. The second graders all leave the classroom for math instruction, at which point I leave as well and go with five of the second graders to the classroom across the hallway. The other six students go to another classroom. Out of the twenty-one students, three are ESL students, two from China and one from Japan, two students are receiving speech instruction, and two students have Individualized Education Plans. We do not have any students in our room with diagnosed behavioral issues. We do have one student who leaves the classroom for learning support in reading and writing
during our literacy stations time. She practices her reading and writing with the support teacher every day for at least an hour.

Overall our classroom is well behaved but garrulous. They like to call out frequently and are constantly reminded to do their work silently. They often end up talking and the volume gets to a level where we need to remind them that they should work silently. There have been a few times when we had to have class meetings to discuss the volume in the classroom.

In the math classroom I work in there are twenty-three students; all of them are second graders, thirteen girls and ten boys. Out of those students there is one ESL student from Japan. Three students have IEPs. For two of the students that are in learning support there are special considerations. One student is taking medication for Obsessive Compulsive Disorder and one student has a Teacher Student Support work with him every day. There are eight students who struggle with math, seven who have average math skills and eight who are strong in mathematics. This classroom has had a multitude of class meetings about behavior and listening skills. Although these students have a strong sense of community, it has a tendency to get in the way of their learning by interrupting their on-task behavior.
Wonderings and Questions

During independent work time, we noticed that our students had been talking and conversing rather than remaining on task to complete their assignments. The chatter was hindering or preventing our students from completing the amount of work they were capable of completing during class time. During writing time in the beginning of January, Katie played the album, “Sing-A-Longs & Lullabies for The Film Curious George” by Jack Johnson. Katie had a hunch that students would be more inclined to listen to the music rather than be tempted to chat with a friend. Katie found that her students were more focused and less chatty than they had been during previous writing workshops when music had not been playing. From Naomi’s personal experience in school, she had found that she was able to focus better when there was music playing while she worked. While she was working in her 6th grade classrooms, her wondering resurfaced because she observed her students not consistently focusing during the writing period. We were both wondering if our math classrooms would also benefit from music playing while students were to be doing independent work.

Our main goal for this inquiry was to find out if playing music would encourage on-task behavior, help our students focus on their given task, and enable them to complete their work more efficiently without losing instructional time. We decided to use our data to determine if our students would be able to accomplish more work in a given period of time, when listening to easy listening music. We wondered if they would be talking less and focusing more. Katie once read a journal stating that playing classical music helps younger
children's cognitive processes (Bullard, 2010). She is interested in inquiring about the additional positive cognitive effects of music on children. These factors led us to creating our main and sub-wonderings:

Main Wondering:

How does playing music encourage on-task behavior, help our students focus on their given task, and complete their work more efficiently without losing instructional time?

Sub-Wondering:

1. How does the music genre affect the students' on-task behavior?
2. How will playing music affect students' transition time?
3. How does the volume of music affect student on-task behavior?
4. How do songs involving curriculum content affect student learning?
5. How does a student’s age affect the type of music genre that is most effective?
6. How do nature background sounds affect students learning when used as a lesson supplement?
Data Collection and Analysis Process

Baseline Data Observations

Prior to the intervention, Naomi and Katie kept a time on-task chart for each of the six previously selected students. Katie chose two students who seemed to always be on-task, two students who were on-task some of the time, and two students who seemed to struggle to stay on-task. Naomi chose three boys and three girls. Of those six students, three were students who she thought would benefit from music playing during independent work time and three were students who she thought would not benefit or not be affected by the music during independent work time. During independent work time, Naomi and Katie recorded their students’ on-task behavior every five minutes without music playing. A student was considered to be on-task if he or she had her eyes on her own assigned work, was not socializing with other students, was in her seat, and had pen-to-paper or fingertips-to-keyboard.

For analysis of the data, Naomi and Katie calculated the percent of their six chosen students who were on-task every five minutes without the music playing. Then Naomi and Katie found the average percent of students who were on-task every five minutes. Additionally, Naomi and Katie combined their two data sets to find the average percent of students on-task without music playing for all twelve students.

Systematic Observations

During the intervention, Naomi and Katie kept an identically formatted time on-task chart for each of the six previously selected students. During independent work time,
Naomi and Katie recorded their students' on-task behavior every five minutes while music was playing.

For analysis of the data, Naomi and Katie calculated the percent of their six chosen students who were on-task every five minutes while the music playing. Then Naomi and Katie found the average percent of students who were on-task every five minutes. Additionally, Naomi and Katie combined their two data sets to find the average percent of students on-task with music playing for all twelve students.

**Photographic Observations**

In Katie's math class, she brought a camera and took pictures of her students while they were working on independent work, with and without music. Naomi took pictures of her students while they were working on independent work, with and without music, during their writing period. Both Naomi and Katie tried to get as many students into one picture as possible.

To analyze the photographs, Katie and Naomi counted the number of students who were on-task in each picture. They would then take the number of on-task students and divide it by the total number of students who were in the photograph and multiply that number by 100. This would provide them with a percentage of students who were on-task during the time the picture was taken.
**Questionnaire**

To gather information about music containing lyrics, while being utilized in the classroom, Naomi posed a questionnaire to her mentor teacher. Naomi was familiar with her mentor’s utilization of common popular music during independent work time in previous school years. She posed several questions for her mentor teacher to elaborate on. She posed several questions for her mentor teacher to elaborate on (Appendix E).

After receiving the data, Naomi and Katie reviewed the information given and compared it to our baseline, systematic, and photographic data.
Claim 1: Classical music has the ability to create an atmosphere that encourages and is conducive to on-task behavior.

The day that we started playing music in the classroom it was evident that the music was having an effect on our students in all grade levels. As we observed our students throughout the intervention, we noticed that our students were less talkative, more on task and remained in their seats for an extended period of time. Overall, the music had a significant effect that promoted on-task behavior during writing. Based on the data collected in a time-on-task chart of our twelve students, 51.7% of the students were on task while music was not being played compared to 84.33% of the students who were on task while music was being played. There was a 32.63% increase of on task behavior (Appendix C-3.)

Our mentors and administrators noticed this significant change as well. For instance, when the principal of the 1st and 2nd grade classroom walked into the classroom, students were working on a worksheet while classical music was playing. The group appeared to be very focused and extremely quiet. Therefore, the principal inquired as to what test they were taking. As the principal asked the teacher her question, the students giggled quietly. The students were aware that the music was helping them behave in the same quiet manner as while taking a test.
Within all classrooms, students noticed a difference in their abilities to focus on any given task. During a class period when the music did not start as soon as the students began working on their independent work, one student inquired, "Are you going to play the music?" After explaining that the music was on its way, he was asked if he liked the music and why. His response was, "Yes. I like the music. It makes everyone quiet so I can think better." During a 6th grade free verse poetry writing period, one student excitedly exclaimed, "The music really helped me write!" She continued to say that her writing changed with the music. When the music sounded melancholy, the main character in her poem was sad. When the music sounded lively, the main character was exciting and lively. It was evident that the music helped this student focus on her writing.

**Claim 2: Music can be utilized as an effective classroom management tool, especially for transitions in 6th grade.**

Utilizing music in a classroom has proven to be an effective classroom management tool. Not only has music prompted students to remain on-task, quiet and in their seats, it has also served as an effective transition tool. Within our inquiry, we looked at music in relation to our sub-question, "How will playing music affect students' transition times?" In Naomi’s 6th grade math class, Naomi and her mentor implemented the co-teaching method of stations. Students were expected to transition to three different stations during the class period. To explore how music affects transition time, Naomi played classical music for thirty seconds in between the stations. Prior to music being played, Naomi set
expectations for her students. She told them that while music was being played they were expected to move to their designated stations. When the music stopped playing, the teacher was going to begin her lesson and expected that the students would be prepared and ready to learn.

Prior to music being played in between stations, transition time took approximately one minute. When music was played, the transition time took approximately 30 seconds (Appendix C-4).

At the end of the 30 seconds, students were seated with their materials out and awaiting directions from the teacher. One station was an independent work-station located in the hallway. Students at the independent work-station knew to transition when they heard the music playing in the classroom. For instance, one student exclaimed, "I hear the music. Time to move!"

**Claim 3: Students and teachers enjoy listening and utilizing music in the classroom.**

After having the music for a few days, the 1st and 2nd graders would constantly ask about whether or not they could listen to the music during a variety of different subject areas throughout the day. During writing time, one 1st grade student asked for the music. When asked why she wanted to have it playing she stated, "When the music is on, no one talks except for to say, "Can you pass the eraser?" because sometimes we need the eraser, but that's it." When music was not playing for a significant amount of time
the classroom, students began to inquire about it. One 2nd grader consistently asked for three days saying, “You forgot the music again!” and “Will you bring it tomorrow? Don’t forget!”

At the beginning of a 6th grade writing period, Naomi asked her students if they wanted to have the music playing while they were writing. Only one student did not raise her hand. Before the intervention was implemented, we hypothesized that 6th grade students would not respond as favorably to our musical selection as the 1st and 2nd graders. We thought that students in 6th grade would not enjoy listening to the music. We predicted that the 6th graders would categorize the music as “uncool.” However, we were intrigued by how well the 6th graders reacted.

While interviewing Kristen Dewitt (a Professional Development Associate and former teacher of a 3rd, 4th and 5th multiage classroom) about how she used music in her classroom, she explained that she played music loud enough so that only part of the room could hear it. She explained that students were allowed to move around the room while working independently. She then explained, “A lot of kids would choose to go and sit in the area where they could hear the music.” It seemed as though students looked forward to music being played during independent work time.

One day, prior to math instruction, Katie asked her mentor if she could go retrieve the speakers and computer that she used to play the music. The teacher responded in a joking but serious manner, “Yes, please do! I need the music as much as the students do!” Additionally, Naomi’s mentor was impressed that her students do not talk during writing
while the music is playing. She does not have to remind students to stop talking and stay on task.

**Claim 4: Music that has accompanying lyrics is more distracting to students than music without lyrics.**

The inspiration for our inquiry question came from a day in the classroom when Katie played music from Jack Johnson’s CD called “Sing-A-Longs & Lullabies For The Film Curious George” for her students during independent writing time. She noticed that the music seemed to help the students remain quiet and on-task, but they were dancing in their seats. Many students also started commenting, “Hey, this is from Curious George!” This made Katie wonder if their familiarity with the music and lyrics was preventing the students from exhibiting their full potential for on-task behavior.

During previous school years, Naomi’s mentor would play music in the classroom during independent work time. She stated that she used the local radio station 95.3 to play in her classroom during writing periods and quiet work periods. The radio station often played mixes, new artist tunes, and local news announcements. Naomi’s mentor wrote, “The students would start off on task but would, during catchier or more familiar tunes, begin to sing the songs. Their attention would be more focused on singing than writing and they would talk about if they liked the song being played.”

In comparison, Naomi’s mentor states that, “The classical music this year seems to relax and focus the students so much better. Since there are no words to the songs and...
commercials, our students are not singing and are fixated on their laptops typing away
during the Writing period. I am super impressed with the difference and the positive
effect the classical music makes this year. The students seem to really enjoy it, do not
talk and are focused the entire period."
Reflections and Future Practice

After reviewing the findings of our inquiry, we both agree that music will be played in our future classrooms. Throughout our inquiry, we were able to see the great effect of music on our students. The way that music was able to calm and help focus our students is a valuable tool that teachers can utilize throughout their careers. This trait can drastically influence a classroom learning environment. Not only were we able to see a positive effect on students’ physical behaviors, we were also able to see a new level of excitement with regard to independent work.

In the future, when continuing with this inquiry, we hope to explore different genres of music and its effects on student on-task behavior. Is it possible that differing genres of music without words have a different effect on student behavior? When Jeffrey Pflaum (2012) used music as a calming tool in his classroom, he stated that Billy Joel songs were not a favorite of Latino and black students. In the future, we also plan to begin playing music during independent work time earlier in the school year. We will be curious to see if playing music throughout the entire course of the school year will have a different effect on student behavior rather than playing the music for only a few months.

Lastly, a future wondering that we would look into would be: How does music affect boys’ and girls’ on-task behavior in different ways? It will be interesting to see if music affects the behavior and achievements of males and females differently at different stages of development. Overall, this inquiry has shown that music can have a positive
effect on students’ on-task behavior in 1st, 2nd, and 6th grades. We look forward to exploring this inquiry in our future classrooms.
APPENDIX:

A) INQUIRY BRIEF

1) Context:

- Naomi’s 6th Grade Classrooms:

  Mount Nittany Middle School is composed of grades six through eight. Sectioned off to its own hallway, the sixth grade is broken up into two teams, the yellow team and the blue team. Yellow team has four classes and blue team has six classes, all with approximately twenty-five students. Students remain in with their homeroom teachers, switching for specials, math, and either science or social studies. Students are exposed to laptops on a daily basis. Additionally, Mount Nittany Middle School strives for a strong school community. Students learn in large part through discussion and a variety of supporting activities.

  Our sixth grade advanced math class consists of sixteen females and fourteen males. All students are reading and comprehending at or above a sixth grade level. Three students have been identified as having ADD/ADHD, whereas one is unofficially diagnosed. We have one student diagnosed with an adjustment disorder, one student diagnosed with Asperger’s syndrome, and one student diagnosed with pervasive developmental disorder and anxiety. One student receives ELL support services. Our class has a wide range of ability and interest. We have five students who have a strong presence in the classroom. These students pick up content quickly, participate in class discussions, help their peers, and ask questions when they do not understand a concept. Four students have a very laid-back work ethic. One student is often distracting his peers and needs frequent redirection. There are also a group of three girls who are part of an exclusive social clique.

  Our class can be categorized as high energy and chatty. Our math curriculum is a connected math approach. Students explore different methods to solve math problems. Our thirty-person class lends itself nicely to co-teaching with multiple stations. Stations
support our wide variety of learners. Stations are used for both enrichment and additional help with lesson content.

Our sixth grade writing class consists of thirteen females, nine males, and one student who is home schooled because of medical complications. Most students are reading and comprehending at a sixth grade level. One student receives learning support for reading, one student receives Title 1 reading, and one student is reads on a low level and was recently exited from ESL support. One student is visually impaired and receives supplements written in Braille. Five students receive enrichment instruction. One student takes morning classes at the high school. Four students are in a seventh grade advanced math class. Additionally, one student has been identified as having ADHD. We have three female leaders and one male leader who often pick up content quickly, participate in class discussions, ask questions, and help their peers. Most of the students are easy going and easily get along with one another. Our students easily find a partner when asked to work in pairs. Our students have a variety of interests and learning styles.

- Katie’s 1st, 2nd, and 5th Grade Classrooms:

Radio Park Elementary is a school that houses Kindergarten through 5th grade all under one roof. Classrooms usually consist of anywhere from 18-25 students per teacher. In the primary hallway each classroom has 1 paraprofessional. Depending on the grade, each student has access to either a laptop or iPad on a daily basis. Radio Park strives to create a student body with strong values. Every day the students say the 4-B’s pledge, “I pledge to be prepared, be responsible, be a good listener and be kind to myself and others.”

The 1st/2nd grade classroom that I am working with throughout this inquiry consists of 21 students ages 6 to 8. There are eleven 1st graders and ten 2nd graders in the classroom. The 2nd graders all leave the classroom for math instruction at which point I leave as well and go with 5 of the 2nd graders to the classroom across the hallway. Out of the 21 students, 3 are ESL students, 2 from China and 1 from Japan, 2 students are receiving speech instruction, and 2 students have IEP’s. We do not have any students in
our room with diagnosed behavioral issues. We do have one student who leaves the classroom for learning support in reading and writing during our literacy stations time. She practices her reading and writing with the support teacher every day for at least an hour.

Overall our classroom is well behaved but chatty. They like to shout out frequently and when they are told to do their work silently. They often end up talking and the volume gets to a level where we need to remind them that they should work silently. We have had to have a couple of times when we have to have class meetings because the talking has gotten too out of hand.

2) **Rationale:**

During independent work time, we’ve noticed that our students have been talking and conversing rather than remaining on task to complete their assignments. The chatter has hindered or prevented our students from completing the amount of work they are capable of completing during class time. During writing time on January 5th, 2012, Katie played the album, “Sing-A-Longs & Lullabies for The Film Curious George” by Jack Johnson. Katie had a hunch that students would be more inclined to listen to the music rather than be tempted to chat with a friend. Katie found that her students were more focused and less chatty than they had been during previous writing workshops when music had not been playing. From Naomi’s personal experience in school, she had found that she was able to focus better when there was music playing while she worked. While she was working in her 6th grade classrooms, her wondering resurfaced because she observed her students not consistently focusing during the writing period. We were both wondering if our math classrooms would also benefit from music playing while students were to be doing independent work. Our main goal for this inquiry is to find out if playing music would encourage on-task behavior, help our students focus on their given task, and enable them to complete their work more efficiently without losing instructional time. We decided use our data to determine if our students, when listening to easy listening music, will be able to
accomplish more work in a given period of time, because they will be talking less and focusing more. Katie once read a journal stating that playing classical music helps younger children cognitive processes. She is interested in inquiring about the additional positive cognitive effects of music on children.

3) Main wondering:
Does playing music encourage on-task behavior, help our students focus on their given task, and complete their work more efficiently without losing instructional time?

4) Sub-questions:
1. Does the music genre affect the students’ task behavior?
2. How will playing music affect students’ transition time?
3. Does the volume of music affect student on-task behavior?
4. How do songs involving curriculum content affect student learning?
5. How does age affect the type of music genre that is most affective?
6. How do nature background sounds affect students learning when used a lesson supplement?

5) Timeline:

Week of February 6, 2012
- Begin collecting baseline data by having students fill out a survey
  - Do you enjoy writing?
  - Do you enjoy math?
  - Do you enjoy listening to music?
  - Where and when do you listen to music? (Do ever listen to music while doing homework?)
- Read sources for annotated bibliography
- Decide on forms of data collection
- Contact Kris Dewitt about music in the classroom

Week of February 13, 2012
- Collect baseline data of student on-task behavior and transition times during math and writing without music playing
- Finish writing Inquiry Brief & Annotated Bibliography
- Finalize schedule for data collection
- Create a Pandora user name that we can both access and share

Week of February 20, 2012
- Collect baseline data of student transition times and on-task behavior during independent work without music playing
- Choose specific students to observe
- Finalize forms of collection data

Week of February 27, 2012
- Collect baseline data of student transition times and on-task behavior during independent work without music playing
- Interview Kris Dewitt about music in the classroom

Week of March 5, 2012 - SPRING BREAK
- Begin analyzing baseline data of student on-task behavior and transition times during independent work time without music playing
- Organize the information we have gathered so far
- Share data after it has been organized

Week of March 12, 2012 - George Winston
• Potential sub-question data collection for Katie: sounds from nature
• Begin collecting student time on task data while playing music
• Begin collecting transition time data while playing music

Week of March 19, 2012 - George Winston
• Continue collecting student time on-task data while playing music
• Continue collecting transition time data while playing music
• Present students with a survey about their opinions on using music in the classroom

Week of March 26, 2012 - George Winston
• Continue collecting student time on-task data while playing music
• Continue collecting transition time data while playing music
• Conduct interviews with 6 observed students about their opinions on the music used over the past 3 weeks.
• Analyze data and start working on Inquiry Draft

Week of April 2, 2012
• Potential sub-question data collection
• Analyze data and continue working on Inquiry Draft

Week of April 9, 2012
• Work on Inquiry Conference presentation

Week of April 16, 2012
• Work on Inquiry Conference presentation

Presentations on April 28th
6) Data collection ideas:

- Observations
  - We will make systematic observations to calculate students' on-task behavior. These include: work completion, quick transition time, students have the pen-to-paper or fingers-to-keyboard, and minimal student chatter.
  - We will make systematic observation to calculate time spent for transitions. We will time how long a transition takes from giving directions to the next task.

- Surveys
  - We will present students with a survey about their opinions on using music in the classroom after the 3 week set of George Winston.

- Student Work
  - We will evaluate student work after a writing or math block is completed with music. We will look for completeness and accuracy of the work.
  - We will evaluate student work after a writing or math block is completed without music. We will look for completeness and accuracy of the work.
  - We will assume that completeness and accuracy of work relates to on-task behavior during a lesson.

- Interviews
  - Our inquiry research will involve playing music and not playing music when students are to be doing independent math and writing work. At the end of the 3 weeks of playing music, we will interview the 6 students to ask if they prefer music to be playing while they are working or if they prefer to not have music.
  - We will also ask our students if they noticed a difference with transitions when we played music as compared to when there was no music.
B) ANNOTATED BIBLIOGRAPHY:

1. 1st and 2nd Grade Students. Personal interview. 20 Mar. 2012.
   a. Getting students' opinion on what they think of the music is one of the most important factors in the effectiveness of the inquiry. In these interviews the students were asked what they thought of the music and why. They were able to explain why they thought the music was helpful to other students and whether or not they enjoyed the music. After interviewing a few students we were able to see that it was clear that they truly enjoyed the music.

   a. In this document there is a plethora of research on the affects on student behavior while music is playing in the classroom. Carney found that when playing music in her classroom, her students responded positively to it. After surveying them, she found that most students enjoyed listening to music during all activities. She also states that she developed a wondering about the effects of playing music during math time. We will use this information to help us further develop questions and formulate ideas of how to most effectively approach our inquiry. We will also be sure to play music during math.

   a. The journal stated that while playing music in her classroom her adolescent students' reading comprehension increased. She stated that background music has been shown to increase on-task performance of student in a variety of settings. Lozanov's method of "suggestology," creates a relaxed
yet concentrated mindset by combining music with softly spoken information. This state of mind is conducive to learning information at a higher rate than average. The article tells the reader that music has been found to enhance focus and concentration as well as reduce stress and improve behavior while being played in a variety of subject settings.

   a. The interview with Kris Dewitt really showed us the versatility of music in the classroom. She helped us develop some of our sub-wonderings, such as using music for a transition tool. In this interview she tells us about all the different ways she was able to use music in her community room that was shared by 3 different classes at once. Music was part of their daily routine for teaching, for transitions and for independent work time.

   a. This website suggests different artists and songs for teachers to play during different parts of the school day. They have lists of everything from "lively cheerful music," to transition music, to background music. Their list of music that helps create a relaxed atmosphere suggests that any of the "4 Seasons" albums created by George Winston, will help students relax while doing work. This is important to our inquiry because this is the artist's music we decided to play while students would be working and it backs up our rationale for playing his music.

   a. These videos are an important tool to utilize when trying to determine whether students are on or off-task. By having these videos we are able to
see student’s behavior and capture what everyone was doing at the moment the video was taken. After importing the videos we are able to look through them and see behaviors we might of missed. These videos are an invaluable tool for our inquiry.

   a. This website talks about the effects of different genres of music on students on-task behavior as well as their attention spans. It states that teachers who started playing concentration music in their classrooms noticed a significant difference. They said, “During work time, the children were more attentive and quieter.” The teachers found that it was calming and the students seemed to be more focused and concentrated. It also talks about a study that was done on mice where 72 mice were split into 3 groups. Group one was played hard rock, group 2 was played classical and group 3 was not played anything at all. The mice were put into a maze 3 times a week, by the end of the experiment the classical music mice cut their maze time by 8 1/2 minutes whereas as the hard rock mice time increased by 20 minutes. This shows that different genres of music do have an effect on the brain and the way that it retains information.

   a. This article describes how musical training can assist in academics. According to the study at Northwestern University, being actively engaged with musical sounds enables the nervous system to provide the scaffolding of meaningful patterns important to learning. By exposing students to music
in the classroom, we are providing students with the ability to hear these patterns. Ultimately, students can be relating these patterns to those needed for successful writing.


   a. This document focuses on using music in the classroom to improve descriptive vocabulary in student writing. While discovering that music did increase vocabulary development, it did not increase all students' vocabulary developments. Music only increased half of the eight students studied. Additionally, Norton and Willis found that most students enjoying listening to music during writing. 70% of the students surveyed circled a smiley face to denote a positive response to having music played while writing. Hopefully this response will be the case for music being played in both writing and math. Since it was found that music was ineffective for a portion of the students studied, we will use multiple genres of music in our classrooms to accommodate various genre preferences.


   a. This blog shares writing exercises that will help students in the classroom. The "Music Technique" exercise involves students picturing an image in their heads while music is playing and then writing about what they picture. Within the blog, Pflaum states that he played Billy Joel in his classroom to "as a way to help calm students' nerves as they returned to class after lunch."
Although the music ultimately relaxed the students, Billy Joel was not the favorite of Latino and black students. Pflaum also suggests that using music exercised in the classroom can increase students’ focus, improve productive flow, and expand work ethic.
## C) Systematic Observations

Table C-1: 1st/2nd Grade Time-on-Task Chart During Writing and Independent Work Time

<table>
<thead>
<tr>
<th>Minutes Independent Work Time</th>
<th>Without Music Playing</th>
<th>With Music Playing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fraction</td>
<td>Percent</td>
</tr>
<tr>
<td><strong>Day 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td>4/6</td>
<td>67%</td>
</tr>
<tr>
<td>10 minutes</td>
<td>4/6</td>
<td>67%</td>
</tr>
<tr>
<td>15 minutes</td>
<td>3/6</td>
<td>50%</td>
</tr>
<tr>
<td>20 minutes</td>
<td>2/6</td>
<td>33%</td>
</tr>
<tr>
<td>25 minutes</td>
<td>3/6</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Day 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td>5/6</td>
<td>83%</td>
</tr>
<tr>
<td>10 minutes</td>
<td>4/6</td>
<td>67%</td>
</tr>
<tr>
<td>15 minutes</td>
<td>3/6</td>
<td>50%</td>
</tr>
<tr>
<td>20 minutes</td>
<td>2/6</td>
<td>33%</td>
</tr>
<tr>
<td>25 minutes</td>
<td>3/6</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Day 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td>3/6</td>
<td>50%</td>
</tr>
<tr>
<td>10 minutes</td>
<td>2/6</td>
<td>33%</td>
</tr>
<tr>
<td>15 minutes</td>
<td>2/6</td>
<td>33%</td>
</tr>
<tr>
<td>20 minutes</td>
<td>1/6</td>
<td>17%</td>
</tr>
<tr>
<td>25 minutes</td>
<td>4/6</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Day 4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 5</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 minutes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AVERAGE** 3/6 50% 5.16/6 86%

Table C-2: 6th Grade Time-on-Task Chart During Writing and Independent Work Time

<table>
<thead>
<tr>
<th>Minutes Independent Work Time</th>
<th>Without Music Playing</th>
<th>With Music Playing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fraction</td>
<td>Percent</td>
</tr>
<tr>
<td><strong>Day 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 minutes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AVERAGE** 3/6 50% 5.16/6 86%
<table>
<thead>
<tr>
<th>Minutes of Independent Work Time</th>
<th>5 minutes</th>
<th>10 minutes</th>
<th>15 minutes</th>
<th>20 minutes</th>
<th>25 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>5/6</td>
<td>2/6</td>
<td>4/6</td>
<td>2/6</td>
<td>3/6</td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>33%</td>
<td>67%</td>
<td>33%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td>4/6</td>
<td>3/6</td>
<td>4/6</td>
<td>5/6</td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>67%</td>
<td>83%</td>
<td>67%</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td>3/6</td>
<td>25 minutes</td>
<td>5/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>50%</td>
<td>83%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td>4/6</td>
<td>5/6</td>
<td>2/6</td>
<td>3/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>67%</td>
<td>83%</td>
<td>33%</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td>4/6</td>
<td>5/6</td>
<td>4/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>67%</td>
<td>83%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td>20 minutes</td>
<td>5/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4/6</td>
<td>25 minutes</td>
<td>4/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>67%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>5/6</td>
<td>3/6</td>
<td>4/6</td>
<td>0/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>50%</td>
<td>67%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/6</td>
<td>5/6</td>
<td>5/6</td>
<td>5/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>83%</td>
<td>83%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/6</td>
<td>25 minutes</td>
<td>5/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 4</td>
<td>6/6</td>
<td>5/6</td>
<td>5/6</td>
<td>4/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>83%</td>
<td>83%</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6/6</td>
<td>5/6</td>
<td>5/6</td>
<td>4/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>83%</td>
<td>83%</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td>Day 5</td>
<td>6/6</td>
<td>5/6</td>
<td>5/6</td>
<td>6/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6/6</td>
<td>5/6</td>
<td>5/6</td>
<td>6/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/6</td>
<td>25 minutes</td>
<td>6/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table C-3: 1st/2nd, 6th Grade Time-on-Task Chart During Writing and Independent Work**

**Without Music Playing**

<table>
<thead>
<tr>
<th>Minutes Independent Work Time</th>
<th>Fraction</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>9/12</td>
<td>75%</td>
</tr>
<tr>
<td>5 minutes</td>
<td>6/12</td>
<td>50%</td>
</tr>
<tr>
<td>15 minutes</td>
<td>7/12</td>
<td>58%</td>
</tr>
</tbody>
</table>

**With Music Playing**

<table>
<thead>
<tr>
<th>Minutes Independent Work Time</th>
<th>Fraction</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>10/12</td>
<td>83%</td>
</tr>
<tr>
<td>10 minutes</td>
<td>10/12</td>
<td>83%</td>
</tr>
<tr>
<td>15 minutes</td>
<td>9/12</td>
<td>75%</td>
</tr>
<tr>
<td>Date</td>
<td>Transition times</td>
<td>Average</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>February 22</td>
<td>Station 1: 1 minute</td>
<td>Average: 1 minute 33 seconds</td>
</tr>
<tr>
<td></td>
<td>Station 2: 2 minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Station 3: 1 minute</td>
<td></td>
</tr>
<tr>
<td>February 23</td>
<td>Station 1: 1 minute</td>
<td>Average: 1 minute</td>
</tr>
<tr>
<td></td>
<td>Station 2: 1 minute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Station 3: 1 minute</td>
<td></td>
</tr>
<tr>
<td>February 24</td>
<td>Station 1: 1 minute 30 seconds</td>
<td>Average: 1 minute 15 seconds</td>
</tr>
<tr>
<td></td>
<td>Station 2: 1 minute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Station 3: 1 minute</td>
<td></td>
</tr>
</tbody>
</table>
### Table C-5: 6th Grade Transition Time Between Stations With Music

<table>
<thead>
<tr>
<th>Date</th>
<th>Transition times</th>
<th>Average</th>
</tr>
</thead>
</table>
| March 20 | Station 1: 0:30 seconds  
            Station 2: 0:30 seconds  
            Station 3: 0:30 seconds | Average: 30 seconds |
| March 21 | Station 1: 0:30 seconds  
            Station 2: 0:30 seconds  
            Station 3: 0:30 seconds | Average: 30 seconds |
| March 22 | Station 1: 0:30 seconds  
            Station 2: 0:30 seconds  
            Station 3: 0:30 seconds | Average: 30 seconds |
| March 23 | Station 1: 0:30 seconds  
            Station 2: 0:20 seconds  
            Station 3: 0:20 seconds | Average: 23.33 seconds |
| March 27 | Station 1: 0:30 seconds  
            Station 2: 0:30 seconds  
            Station 3: 0:30 seconds | Average: 30 seconds |
| March 29 | Station 1: 0:30 seconds  
            Station 2: 0:30 seconds  
            Station 3: 0:30 seconds | Average: 30 seconds |

### D) Photographic Observations

**6th Grade Writing Period: Before Music**
6th Grade Writing Period: While Music is Playing

2nd Grade Classroom Without Music:
E) Questionnaire for Mentor

1. What type of music did you use?
2. What subject did you play the music during?
3. Were the students on task?
4. What were the students' mannerisms?
5. Do you think the music helped students stay on task?
6. How were the students' behaviors, mannerisms, etc. similar or different from our students' this year when classical music was played during writing?

**Terri Ceschini's Responses:**
1. I used Channel 4 ~ 95.3 radio station that is playing with ruling announcements for World, State, and City News and Weather. It also includes advertisements. Also, the music is usually a variety of music, often mixes with the new artist tunes.
2. I only played music during the Writing period and Quiet Work periods.
3. The students would start off on task but would, during catchier or more familiar tunes, begin to sing the songs. Their attention would be more focused on singing than writing and they would talk about if they liked the song being played. When it was a live radio station the students would lose focus during commercials as well.
4. I would remind them about staying on task but it would not last long as they would begin to sing and talk to each other when the songs were recognizable and popular.
5. I think the music helped students stay on task only when they were students who focused with background music being played. These were only a few students.
6. The classical music this year seems to relax and focus the students so much better. Since there are no words to the songs and commercials, our students are not singing and are fixated on their laptops typing away during the Writing period. I am super impressed with the difference and the positive effect the classical music makes this year. The students seem to really enjoy it, do not talk and are focused the entire period.